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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/547,332	09/01/2005	Tomoyoshi Yamashita	047991-5021	3147

9629 7590 12/22/2006
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EXAMINER

DZIERZYNSKI, EVAN P

ART UNIT	PAPER NUMBER
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2875

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/22/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/547,332

Applicant(s)

YAMASHITA ET AL.

Examiner

Evan Dzierzynski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

It is noted that claims 12-15 are multiple dependent claims. Each is dependent on "one of claims 1 to 11." There are, therefore, 55 claims in the application. Applicant has previously paid for only 20 claims. Applicant's deposit account (#50-0310) has now been charged \$1750 for the remaining 35 claims.

Claim Objections

Claims 13-15 are objected to because of the following informalities: In line 1 of each claim there is a typographical error, "claims" should be changed to "claim." Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

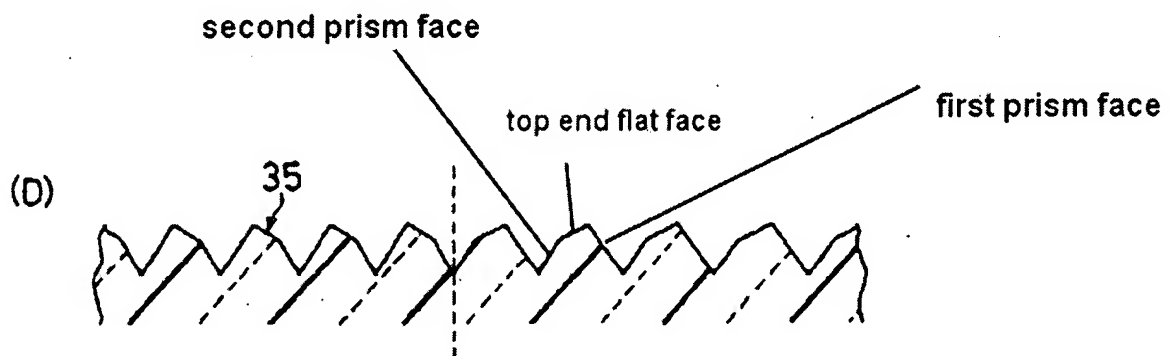
Claims 1, 2, 7, 11, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito (US Pat5890791) in view of Katsu et al. (US Pat 6692133).

As for claim 1, Saito discloses a light incoming surface (bottom of 13) into which light enters and a light outgoing surface (top of 13) which is positioned on a side opposite to the light incoming surface and from which the light is emitted; Saito also discloses plural elongated prisms (Fig 1, 13a) that are parallel with each other on the light incoming surface. Saito fails to teach or disclose that each of the elongated prisms is constituted by a top end flat face having an inclination angle of 1 to 50 degrees that is

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positioned at a top end part of the elongated prism, a first prism face positioned on one side of the top end flat face, and a second prism face positioned on another side of the top end flat face.

Katsu et al. teaches a device in which each of the elongated prisms is constituted by a top end flat face (as indicated below) having an inclination angle of 1 to 50 degrees that is positioned at a top end part of the elongated prism, a first prism face positioned on one side of the top end flat face, and a second prism face positioned on another side of the top end flat face (as indicated below). It would have been obvious for one of ordinary skill in the art to use the prism layer with the top end flat face, and first and second prism faces, as taught by Katsu, with the device of Saito in order to improve the brightness of the device (col 6, ln 50+).



As for claim 2, Saito and Katsu et al. teach the device as discussed above, but fail to teach or disclose that the top end flat face has a size of $0.008p$ to $0.088p$ in a cross section perpendicular to an elongated direction of the elongated prism where P is a pitch of the elongated prism. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

As for claim 7, Katsu et al. discloses that at least one of the first and second prism faces is constituted by plural faces (Fig 3d), and each of the plural faces is constituted by a flat face, as indicated above.

As for claim 11, Saito discloses the device as discussed above, but fails to specifically teach that any of the first or second prism faces that is constituted by plural faces has a ratio d/P of a maximum distance d between the prism face and a virtual plane connecting a top edge and a bottom edge to the pitch P of the elongated prisms, the ratio d/P being 0.1 to 5%. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

As for claim 12, Saito discloses a primary light source 11, a light guide 12 having a light incident face (leftmost end of 12, Fig 1) into which light emitted from the primary light source enters, and a light-emitting face 12b from which guided light is emitted; and the optical deflector element 13 as set forth in claim 1 provided adjacent to the light guide on a side of the light-emitting face thereof (Fig 1):

As for claim 15, Saito discloses the device as discussed above but fails to teach that the first prism face of the elongated prism is positioned closer to the primary light source than the second prism face, the first prism face is constituted by a flat face, the second prism face is constituted by a convex curve face or plural faces, and each of the plural faces is constituted by a flat face or a convex curve face. Katsu et al. discloses a device in which the first prism face of the elongated prism is positioned closer to the primary light source than the second prism face (Katsu Fig 3d, as indicated on page 3 of

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the instant Office action), and that the first prism face is constituted by a flat face, the second prism face is constituted by plural faces, and each of the plural faces is constituted by a flat face (Fig 3d). It would have been obvious for one of ordinary skill in the art to combine the prism with plural faces of Katsu et al. with the device of Saito in order to improve the brightness of the device (col 6, ln 50+).

Claims 3-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito and Katsu et al, and further in view of Suzuki (US Pat 6088074).

As for claim 3, Saito discloses the device as discussed above but fails to further teach or disclose that at least one of the first and second prism faces is constituted by a convex curve face. Suzuki teaches a device which has a prism face constituted by a convex curve face (Fig 10). It would have been obvious for one of ordinary skill in the art to combine the convex curve prism face of Suzuki with the device of Saito in order to help the device spread illumination more efficiently (col 8, ln 13-15).

As for claim 4, Saito further discloses that the convex curve face has a cross-section perpendicular to the elongated direction of the elongated prism, the cross-section having an arc-like shape (Fig 2).

As for claim 5, Saito discloses the device as discussed above but fails to specify that a ratio r/P of a curvature radius r of the convex curve face to the pitch P of the elongated prisms is 2 to 50. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

As for claim 6, Saito discloses the device as discussed above but fails to specify that the prism face constituted by the convex curve face has a ratio d/P of a maximum distance d between the prism face and a virtual plane connecting a top edge and a bottom edge to the pitch P of the elongated prisms, the ratio d/P being 0.1 to 5%. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

As for claim 8, Saito discloses the device as discussed above but fails to further teach or disclose that the plural faces include a flat face adjacent to the top end flat face, and a convex curve face adjacent to the flat face (Fig 9). Suzuki teaches a device with a flat face adjacent to a top end flat face, and a convex curve (Fig 10) face adjacent the flat face. It would have been obvious for one of ordinary skill in the art to combine the convex curve prism face of Suzuki with the device of Saito in order to help the device spread illumination more efficiently (col 8, ln 13-15).

As for claim 9, Saito discloses that the convex curve face has a cross-section perpendicular to the elongated direction of the elongated prism, the cross-section having an arc-like shape (Fig 2).

As for claim 10, Saito discloses the device as discussed above but fails to specify that a ratio r/P of a curvature radius r of the convex curve face to the pitch P of the elongated prisms is 2 to 50. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As for claim 13, the prior art fails to teach or disclose an inclination angle of the top end flat face of the optical deflector element that is an angle that peak light from the emission face does not enter the optical deflector element through the top end flat face.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Dzierzynski whose telephone number is (571)-272-2336. The examiner can normally be reached on Monday through Friday 7:00 am - 3:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on M-F (571)-272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Evan Dzierzynski

12/13/2006



RENEE LUEBKE
PRIMARY EXAMINER